RENEWABLE ENERGY JUNIOR LEVEL

Problem statement:

1. **Solar-Powered Water Pump:**

   Design a model of a solar-powered water pump for irrigation. Include a small solar panel and a water pump to show how solar energy can move water to plants.

2. **Wind-Powered Water Pump:**

   Create a model of a wind-powered water pump for irrigation. Use a small wind turbine to power the pump, demonstrating how wind energy can move water to crops.

3. **Hydro-Powered Water Pump:**

   Build a model of a water pump powered by water flow. Include a small water wheel or turbine to operate the pump, showing how moving water can be used for irrigation.

4. **Solar-Powered LED Farm Lights:**

   Construct a setup where solar panels generate electricity for LED farm lights. Show how solar energy can provide lighting for farms at night or in low light.

5. **Wind-Powered LED Farm Lights:**

   Develop a model where a small wind turbine generates electricity for LED farm lights. Demonstrate how wind energy can be used to light farms sustainably.

6. **Hydro-Powered LED Farm Lights:**

   Design a small hydroelectric generator model that uses flowing water to produce electricity for LED farm lights. Show how water flow can be converted into power for farm lighting.

NOTE:

- Students should create a working model project related to agriculture using any renewable energy source, such as solar energy, wind energy, or hydro energy, and explain it.

- Each team can choose only one problem statement out of six from the above list to solve throughout the competition.

PRELIMINARY LEVEL

Participation:

Students must prepare a document for an agriculture-related project using the selected renewable energy source (solar, wind, or hydro). The document should include:

- Project Materials: List all materials used.
- How the Project Works: Explain the functionality and operation of the project.
- Benefits of the Project: Describe the advantages and potential impact of the project.
- Student Details: Include names, school, and location.

Submission Requirements:

- The document must be in PDF format and should not exceed two pages.
- No AI-generated tools are allowed for document creation.
- The document should be sent via email to bharatteckleague@gmail.com.

ZONAL LEVEL

Competition:

- Teams selected from the prelims must bring their project materials to the venue.
- Students will have a maximum of 3 hours to assemble and complete their project on-site.
- The model should not exceed **50 cm in length** and **50 cm in width**. Only limited decorative items and components are allowed to ensure the focus remains on functionality.

Presentation & Judging:

- Teams must explain their project and demonstrate its functionality to the judges.
- Teams will be evaluated based on the performance and explanation of their project.

NOTE: Ensure that all project components and tools are brought to the venue as required.

FINAL LEVEL

Competition:

- Teams selected from the zonal level must bring their fully completed projects to the venue for final level participation.
- In the final level, teams will present their projects to both judges and the audience.
- The project should be fully completed and come to the competition as an upgraded version from the zonal level.
- Teams must give a detailed presentation (PPT) in their laptop, and also explaining the project's design, functionality, and benefits.

Performance Judging:

- Judges will evaluate projects based on innovation, functionality, presentation, and the practical benefits of the project.
- Teams will be assessed on their ability to clearly explain their project and its impact.